

MINUTES

MEETING: CROWG – Control Room Operations Working Group
DATE: Tuesday, 14 November 2023
TIME: 9.00am – 12.00pm (AEST/QLD Time)
LOCATION: MS Teams Meeting, QLD Meeting “Hub”
[Microsoft Teams Meeting Details](#)

NAME	INITIALS	ORGANISATION	NAME	INITIALS	ORGANISATION
Mario Rositano	MR	AEMO (Chair)	Robert Armstrong	RA	ACEREZ
Alexis Bowman	AB	AEMO	Rick Madden	RM	Energy Queensland
Caroline Gurtler	CF	AEMO	Warren Wood	WW	EVOenergy
Daniel Lavis	DL	AEMO	Jordan Maxwell	JM	Iberdrola
Darren Spoor	DS	AEMO	Hal Jorgensen	HJ	Neoen
Dave Bradley	DB	AEMO	Lester Calver	LA	Origin Energy
James Guest	JG	AEMO	Ellise Janetzki	EJ	Overwatch Energy
Lauren Rachele	LR	AEMO	James Tetlow	JT	Overwatch Energy
Paul Elliott	PE	AEMO	Jonathon Dyson	JD	Overwatch Energy
Adam Budzynski	ADB	AGL	Robert McCann	RM	Power & Water Corporation
Dylan Reynolds	DR	AGL	Sam Parisi	SP	Power & Water Corporation
Neil O’Leary	NL	AGL	Vernon Lee	VL	Power & Water Corporation
Stephen Reed	SR	Ausgrid	Wayne Cardinal	WC	Powerlink
Martin Cavanagh	MC	AusNet	Adrian Pang	AP	Squadron Energy (CWP)
Duane Brooks	DBR	Electranet	Fabian Spescha	FS	Total Eren
Steve Cursaro	SC	Electranet	Steve Stannard	SS	Western Power
Mark Epifanio	ME	Electranet			
Jacob Harrington	JH	Endeavour Energy			

1 Welcome and Introduction | Mario Rositano

- 1.1 Roll Call taken in person and via MS Teams.
- 1.2 Welcomed current and new members, reviewed the agenda and discussed purpose of the meeting, including continued discussions on topics tabled at the last meeting.

2 Minutes / Actions | Mario Rositano

- 2.1 Minutes of the CROWG meeting 18 April 2023 – accepted by Hal Jorgensen – NEOEN.
[27 July 2023 - CROWG Minutes](#)
- 2.2 Actions of the CROWG meeting 27 July 2023 – reviewed – [27 July 2023 – CROWG Actions Register](#)

3 CROWG Meeting Administration | Mario Rositano

- 3.1 Rotating CROWG “Chairing” role:
 - Call for volunteers for meetings in 2024 – members can volunteer for this role as a once only if preferred. Mario and AEMO will provide all required support and guidance before and during the CROWG meeting. MR will reach out to members again via email but were also encouraged to contact Mario if interested.

3.2 CROWG on the AEMO website

- Created on the AEMO Website – [Forums and Working Groups section > List of Industry Forums and Working Groups > CROWG page.](#)
- [CROWG Feedback Survey](#)

3.3 CROWG Mailbox

- Email account for Control Room Operations Working Group (CROWG) communications - CROWG@aemo.com.au.

3.4 Face to Face Meetings – what do we think?

- Members were asked for their input on continuing meeting face to face. The consensus was to keep the face to face meetings and provide the MS Teams option for those who cannot attend. It is envisioned that meetings will be held at DNSP and TNSP offices over the coming year.

4 Power System – Recent Events and What’s on the Horizon

4.1 Update from members

- MR discussed the first NSW System Strength Market Notice was issued due to a lack of synchronous generation.
- JD discussed that over the past 20 years he has not seen the market as volatile, price wise as it currently is. Members gave input on their own experiences of issues caused by a volatile market.
- MJ discussed that in NSW recently, there has been a large amount of impact from generators South of Sydney forcing flows into Victoria and then the NRM binding and changing the flows in that region and does that impact largely for the control room operators? Members responded with their own experiences and expressed gratitude for automation of systems, which assists in reducing impacts.
- DS discussed the impact of sudden changes in dispatch targets. AEMO requests that if there is a large unit that can go from zero to full output in one five-minute interval, they are to advise the AEMO Control Room that it is about to occur prior to it happening. Other than that, there is no system impact.

4.2 Low Load Records across the NEM – what does this mean for members?

- MR discussed low load records and that the minimum load in SA was five - Members provided input on challenges they are facing, as well as the actions and programs that are taking place.

4.3 Bushfires – how are we looking this summer?

- This summer is looking to be nasty with regards to bushfires. Participants are preparing and completing training that looks at what happens if there are severe bushfires - Members provided input on what it looks like in the control room when there is a bush fire and what are some of the things that should be done.
- DS referred to the AEMO procedure [SO_OP_3715 – Power System Security Guidelines](#) and obligations on TNSPs to identify bushfires that impact the transmission network and request the need for reclassification from AEMO. There are also obligations on generators as they need to be able to identify abnormal conditions under conditions 4.8.1 and notify AEMO.
- MR encouraged members to review SO_OP_3715 – Appendix A, so they are aware of what is involved in managing that type of event - [Indji Watch](#) –site used by AEMO for weather hazard monitoring and alerting.

ACTION: MR – Arrange to give Jordan Maxwell from Iberdrola a demonstration of Indji Watch and how AEMO uses the data – invitation was expanded to include any member who would benefit from a demonstration.

5 Presentations, Addresses and Suggested Viewing Material

5.1 PMU’s in the NEM – *James Guest – Senior Engineer, Operations - AEMO*

[Presentation - AEMO WAMS Development Project](#)

- Members engaged James in a discussion on system security, visibility of issues, system requirements and the Connections Team looking into incentivising monitoring.
- Does AEMO use WAMS, PMUs etc for any other applications feeding into state estimator or any other stabilities – are they being used widespread across other applications? The only two official users are the inter-area oscillation

and the control interactional selection detection. However, there is a considerable amount of implicit benefit of having the data there and available to conduct studies and event reviews.

- A challenge raised was the requirement of installation of PMYs at each of the generators and the large amount of data that would need to be transmitted back to the connecting NSP and then back to email. Has AEMO considered how that should be managed, particularly if there are communication outages, what are the actions being undertaken following detection of an oscillation? Is there automatic processes in place or are the events still handled manually? AEMO still handles event like these manually. It is a challenge and something that is being worked through by AEMO and NSP's to be able to obtain their data. When the need to obtain data from generators is added to that, the challenge increases. There is an AEMO project to effectively change the technology that underlies our communications network to NSPs, which is projected to finish next year. It is a new technology for networking devices and would be easier to establish connections to generators and that would include PV devices.

5.2 Power and Water Corporation Overview – *Vernon Lee – Real Time Operations Manager, Power and Water Corporation*

- VL discussed that his background is from distribution. The Power and Water Corporation monitor and operate the regulated power system in the NT from Darwin down to Catherine and Alice Springs in Tennant Creek. They also do dispatch of generation in accordance with the current interim market arrangements.
- The Power and Water Corporation are still heavily reliant on synchronous generation. They are seeing system strength issues with behind the meter and are having issues with low system demand as well. Similar problems to the NEM, just on a different scale.

6 Phone Pre-Recorded Messaging

6.1 Update to discussion from last meeting on disabling the telephone pre-recorded messaging and being when calling control room to control room – *Colin Sharp – Real Time Operations Team Leader- TasNetworks*

- Members are reminded that it is in the NER Section 4.11.

7 Outage Coordination (TNSPs, DNSPs, Generators)

7.1 What are the current and emerging challenges in the outage coordination space. For example, it seems there's never a "right" time or "opportunity" to take out major lines for maintenance/other works.

7.2 TNSP to discuss how they are improving their outage coordination across state lines / interaction with other TNSPs

- MR – Discussed emerging challenges in the outage coordination space, with it seeming to be the right time to take out major lines. Whenever major lines are taken out, there is an impact and effect on the generator. It will affect someone's bottom line somewhere and invited members to discuss the challenges they experience.
- HJ discussed issues that NEOEN experience challenges when one TNSP is carrying out maintenance in one area, it will affect regions and other states. The challenge is to know how well they coordinate. It is sometimes difficult to find out.
- MC discussed that in some respects it will get better in regards to the awareness of what outages are out there. For example, AusNet are investing in providing more market awareness of its plans, but it is still challenging in some situations.

8 Workplace Health, Safety and Environment in Power System Operations

8.1 Discussion on how WHSE applies to the Power System

- Ongoing and carried over to the next CROWG meeting.

9 Power System Operator Training (PSOT) | Daniel Lavis

9.1 Update of Power System Operator Training Framework (PSOT) - Dan Lavis (AEMO)

9.2 NEM Operations Academy program overview

- AEMO has executed a contract with Thomson Bridge to develop 11 modules from the foundational level of the PSOT Framework, as a Pilot Project. A kick-off meeting is scheduled to establish a steering committee for the Pilot work and seek participant volunteers to carry out testing on the pilot modules. First module should be ready for review in February 2024, with the others to quickly follow. It is envisioned that the 11 modules will all be delivered for review and testing by October 2024.
- DL called for volunteers to participate in testing the 11 Pilot modules.

10 Shift Work | Mario Rositano

10.1 Update from members

- Members discussed that control rooms are generally set up for BAU and not particularly for crisis events.
- Although spectacular solutions were not derived, management of this risk by members was also discussed, including Clause 4.2.6 which denotes that we need to be able to resecure the network after an event, within 30 minutes and that includes the analogy of one person on shift.
- MR asked members to think about how their organisation manages the risk and discussions will continue at the next meeting.

ACTION: MR – Send information to members about the challenges of shift work in a control room. Members to review information and contribute to the informed discussion during the next CROWG meeting.

10.2 Reminder of the effects both mentally and physically of shift work on control room staff (PS: it's Movember!)

10.3 Other business

11 Communications | Darren Spoor

11.1 Seeking clarification on how we define reliable and resilient telephone connections – Darren Spoor (AEMO)

- A comment was passed back from the PSSWG about the best practise in operations voice communications, which was published in the NEM Generator Registration Guidelines. That document defines the need for participants to have PSTN contacts and reliable points of communication into voice communication networks.
- The existing best practice document lists PSTN networks i.e. Telstra and Optus prohibitively exclude the use of mobile phones, however the PSSWG was asking whether instead we could define reliability requirements, rather than connection requirements, on the basis that some PSTN connections may be less reliable than some mobile phone connections.
- DS advised that he the wording in the existing best practice document would remain as is, but as an opportunity to refine if we see the need.
- MR asked members to provide feedback if they were interested, however if no feedback is received, wording will remain as is.

ACTION: ALL MEMBERS – Review the following question from the PSSWG and provide feedback to MR or DS prior to the next CROWG meeting.

Question for CROWG Members from the PSSWG:

The CROWG recently developed voice communications requirements, which have now been included in Section 3.3.1 of the NEM Generator Registration Guide: [nem-generator-registration-guide.pdf \(aemo.com.au\)](https://www.aemo.com.au/nem-generator-registration-guide.pdf)

The PSSWG is seeking clarification on the following section:

- Primary operational contacts should be established via direct connections through a Public Switched Telephone Network (PSTN).

- Backup operational contacts should also be established via direct connections through a PSTN but can include mobile phones if the phone is located in an area of reliable coverage to more than one carrier cell tower and is on a different network to the primary number

Should we clearly define what a PSTN is in the context of resilient communications?

Could this include NBN with battery backup for at least (say) three hours, in accordance with the communications equipment automatic access standard? (NER S5.2.6.2).

12 Electricity Industry Terminology and Phraseology

12.1 System Restart Document Update

- Final version created and been used as part of System Restart Training. Available for members on the CROWG page in the AEMO website.

12.2 Emergency and Time Critical Document Update

- Members will be asked to read and review the document as it needs amendments and additions. Comments are welcome. A meeting of the subgroup will be scheduled to finalise the document and it is envisioned that process will be concluded prior to the July CROWG meeting.

12.3 What's Next?

- Members will be asked to read and review the document as it needs amendments and additions. Comments are welcome. A meeting of the subgroup will be scheduled to finalise the document and it is envisioned that process will be concluded prior to the July CROWG meeting.

ACTION: MR – To progress with updating the document – including relevant meetings with the sub-group.

13 Control Room Technology and Ergonomics | Mario Rositano

13.1 What are the latest upgrades, ideas, proposals, projects, etc. What currently works and what issues have been experienced.

- MR discussed control room technologies and some of the situation awareness issues for people that are on shift and being overloaded with events that are happening and how should that be catered for? System normal – business as usual – one person can handle things. However, if issues do arise, there are not enough eyes, hands, brain power or phone power to deal with many situations.

13.2 Headphones, phones, recordings, etc. What is best practice in the NEM?

- Ongoing and carried over to the next CROWG meeting.

14 Other Business

14.1 Feedback / Survey

14.2 Frequency of meetings. Should the CROWG be scaled back to two meetings per year?

- Members were asked to consider if going forward there will be two CROWG meetings per year and if anyone would like a third meeting, they can initiate the chair for that meeting. Further discussions and a decision will be made at the next CROWG meeting.

14.3 VDS Update

- Ongoing and carried over to the next CROWG meeting.

15 Next Meeting

- The next meeting will be scheduled in 2024. MR will send out meeting invitations.

Meeting Forward Plan

DATE	HOST	LOCATION
2024	TBA	TBA

Meeting closed at 11.57am (Market Time).